Frequently Asked Questions

Scientific Review of Recent SEDAR Grouper Assessments

April 2007

How is the status of groupers determined?

- The status of groupers is assessed through the Southeast Data, Assessment, and Review (SEDAR) process, which was initiated in 2002 to improve the quality and reliability of fishery population assessments.
- SEDAR involves fishery scientists and managers, academics, and affected interest groups in assessment development through three separate workshops:
  - The first is a data workshop, during which participants document, compile, analyze, and review available data and information, then determine what data should be used in the fishery population assessment.
  - The second is an assessment workshop, during which participants determine how the fishery population assessment should be conducted, how to incorporate uncertainty in the assessment, and how to interpret the information produced by the assessment.
  - The third is a review workshop, during which independent experts review and evaluate the fishery population assessment produced through the first two workshops and determine the adequacy of the assessment.
- Each SEDAR assessment is then reviewed by the Scientific and Statistical Committee (SSC) of the Regional Fishery Management Council (Council) that has jurisdiction over the fish population addressed by the assessment. The Council SSC determines whether the data and methodology used in the assessment are based on the best scientific information available, and develops specific management recommendations for Council consideration.

Why are recent gag and red grouper assessments being reviewed again?

- The SEDAR Steering Committee recommended additional scientific review of the SEDAR 10 (Gulf of Mexico and South Atlantic gag) and SEDAR 12 (Gulf of Mexico red grouper) assessments to ensure key data and assessment configuration decisions are clearly documented based on the most appropriate methods.
- The SEDAR Steering Committee recognizes grouper science improves with each stock assessment and, therefore, recommended additional evaluation of these recent grouper assessments to ensure that any perceived differences in methods or data treatment are scientifically justified.

- The SEDAR Steering Committee believes it is important to utilize a consistent scientific approach for gag and red grouper because both species are part of a multi-species grouper fishery and are frequently captured from the same vessels.

What are the major determinations that differed in the red grouper and gag assessments?

Catchability

- Scientists have long recognized that fishermen's ability to catch fish has changed over time. However, obtaining the information needed to accurately quantify changes in fishermen's effectiveness, and developing assessment models that are capable of accommodating such changes is difficult.
- The SEDAR 10 Gulf of Mexico and South Atlantic gag assessments and the SEDAR 12 red grouper assessment evaluated assessment configuration options based on both constant and changing catchability scenarios. However, the SEDAR 10 gag assessment review panels recommended the status of gag be determined based on a constant catchability scenario, whereas the SEDAR 12 red grouper review panel recommended the status of red grouper be determined based on a changing catchability scenario.

Natural Mortality

- The SEDAR 10 Gulf of Mexico and South Atlantic gag assessments and the SEDAR 12 red grouper assessment assume the rate at which fish die from natural causes decreases as fish grow older and larger. However, the SEDAR 12 red grouper review panel recommended an alternative method of determining the specific level of natural mortality that should be applied to each age group of fish evaluated in the assessment model.

Discard Mortality Rates

- The discard mortality rate used in the SEDAR 10 Gulf of Mexico gag assessment to estimate the total number of dead discards incorporated information on the depth at which fish were captured. This information is relevant because fish taken from deeper waters are assumed less likely to survive when returned to the water.
- Discards could not be addressed by depth in the SEDAR 10 South Atlantic gag assessment or in the SEDAR 12 red grouper assessment because studies of discard mortality by depth were either lacking or were confounded by other variables, as well as insufficient information on capture depth. Therefore, discard mortality for South Atlantic gag grouper and Gulf of Mexico red grouper was estimated as an average rate across all depths.

Discard Size and Age Allocation

- Only a small amount of information is available on the size and age of fish that are discarded by commercial and recreational fisheries. Consequently, scientists must make assumptions about the size and age of discarded fish so that estimates of discard losses can be included in assessment models.
- The assumptions used in the SEDAR 10 South Atlantic gag and SEDAR 12 red grouper assessments indicate the majority of fish discarded in those fisheries are below the minimum size limit, which is consistent with an assumption that most fish are discarded because of the minimum size limit.

- The assumptions used in the SEDAR 10 Gulf of Mexico gag grouper assessment indicate fish discarded in that fishery are of the same size and age as the fish retained by that fishery, which is more consistent with an assumption that most Gulf of Mexico gag are discarded because of possession limits.

Overfishing/Overfished Definitions

- The SEDAR 10 South Atlantic gag and SEDAR 12 red grouper review panels recommended management benchmarks that are based on the concept of maximum sustainable yield (MSY), or the maximum amount of fish a fishery can produce over time.
- The SEDAR 10 Gulf of Mexico gag review panel considered management benchmarks that are based on the concept of MSY to be unreliable for Gulf of Mexico gag grouper and, therefore, did not provide MSY-based benchmarks for that fish stock. Additionally, although the review panel provided numerous alternative benchmark proxies for Gulf of Mexico gag, the panel did not recommend any specific proxies for determining whether the stock is overfished or undergoing overfishing.

Where and when will the grouper review workshops occur?

- The additional scientific review of grouper assessments is occurring in two stages:
  - A SEDAR *grouper assessment evaluation panel* met at NOAA Fisheries Service's Southeast Fisheries Science Center in Miami, Florida, March 19-22, 2007, to review the data and technical details of all three assessments and recommend additional analyses as needed.
  - A SEDAR *review panel* will meet at the Hilton Hotel in St. Petersburg, Florida, May 8-10, 2007, to review the report of the evaluation committee and consider any additional analyses suggested. The review panel will prepare a written report for consideration by the Gulf of Mexico and South Atlantic Councils.

Who will be invited to participate in the review workshops?

- The SEDAR *grouper assessment evaluation panel* is composed of representatives of the Gulf and South Atlantic Council SSCs and assessment panels, SEDAR staff, and NOAA Fisheries Service.
- The SEDAR *review panel* will be composed of a Gulf of Mexico Council SSC representative, reviewers appointed through the Center for Independent Experts, and a chair assigned by NOAA Fisheries Service from outside the Southeast Region.
- These and all SEDAR workshops are open to the public.

Where can I find more information on SEDAR and the grouper assessments?

- The final report of the SEDAR 10 gag review workshop is available online at: http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=10
- The final report of the SEDAR 12 red grouper review workshop is available online at: http://www.sefsc.noaa.gov/sedar/Sedar_Workshops.jsp?WorkshopNum=12
- Additional background and information on the SEDAR process is available online at: http://www.sefsc.noaa.gov/sedar/
- Additional information on the Center for Independent Experts is available online at: http://www.rsmas.miami.edu/groups/cie/